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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/530,881
Filing Date: April 11, 2005
Appellant(s): SPILLE ET AL.

Reitseng Lin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/10/09 and the corrections filed on 6/15/09 and 9/23/09 appealing from the Office action mailed 10/22/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Potard, G. et al. "Using XML Schemas to Create and Encode Interactive 3-D Audio Scenes for Multimedia and Virtual Reality Applications" DISTRIBUTED COMMUNITIES ON THE WEB, 4TH INT'L WORKSHOP, DCW 2002, REVISED PAPERS (LECTURE NOTES IN COMPUTER SCIENCE, vol. 2468), April 3-5, 2002, pp. 193-203

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 16, 17, 19-23 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potard et al. (hereafter Potard) ("Using XML Schemas to Create and Encode Interactive 3-D Audio Scenes for Multimedia and Virtual Reality Applications").

Regarding claims 16, 22 and 28, Potard discloses a method for coding a presentation description of an audio signal comprising:

assigning a value (for example, reflecting and absorbing coefficient, or original pitch value) to a first non-point sound source (section. 2.3.1., the original source is a "dry" source without defined position; the first child object of a complex audio source; for example, the singer object to be repeated) using said audio signal;

generating for said first non-point sound source a parametric description (Table 1), said parametric description including said assigned value in a field specifying decorrelation information (factors such as, for example, reflecting and absorbing coefficient and pitch transformation would distinguish one child sound source from another child sound source);

changing said value for an additional non-point sound source (another child object for the complex audio source; see section 2.3.1., pitch transformation for the additional non-point sound source is inherently different from the pitch transformation of the first non-point sound source in order to simulate the chorus effect) using the same audio signal (when the members in a choir sing the same audio); and

generating, for said additional non-point sound source, a parametric description (section 2.3.2, the macro-object libraries include the description of macro-objects), said parametric description including said changed value in a field specifying decorrelation information to specify a different decorrelation for said additional non-point sound source.

Regarding claims 16, 22 and 28, Potard fails to show the changed value for an additional non-point sound source is incrementing the value in a field specifying decorrelation information. Potard teaches a specific example on how to use two or more non-point sound sources to define a complex audio source, such as a choir in Fig. 1. Potard explicitly teaches that pitch transformation is applied to each non-point sound source. One skilled in the art would have expected that whether to increment or decrement the value (in terms of the pitch transformation) would be the decision by the user depending on how he/she wants to create the sound scene. For example, the first member of the choir has an original pitch value. The second additional member of the choir could have a pitch value higher than the original pitch value. So, the decorrelation information for the additional non-point sound source is incrementing the original value. Thus, it would have been obvious to one of ordinary skill in the art to modify Potard by adjusting the value appropriately, including increment the value, in order to create the sound effect, such as pitch variation between a plurality of choir members, as intended by the user.

Regarding claims 17 and 23, Potard illustrates in Fig. 5 that separate sound sources are coded as separate audio objects. Fig. 7 is another illustration. Fig. 1

shows the first node defining an object (choir object) and the second node defining the wideness (how many children) and presentation of said non-point sound source by multiple decorrelated point sound sources (by reflective surface and pitch transformation).

Regarding claims 19, 20, 25 and 26, Potard discloses that the size and the defined shape are given by an opening angle having a vertical and a horizontal component (sect. 2.5).

Regarding claims 22 and 29, Potard further illustrates in Figs. 6 and 7 how to decode a presentation description. The steps of evaluating at least of said fields specifying said decorrelation information included in the parametric description of said non-point sound source and the step of selecting, depending on a value assigned to a field in said parametric description, one of the following: one of several decorrelations to the audio signal of said non-point sound source, the strength of the decorrelation of the selected decorrelation read on Table 1 and sect. 3.1 in which the user is allow to modify the scene. The scene, as understood by Potard's disclosure, is defined by many factors, including and not limiting to the decorrelations to non-point sound source and the strength of the decorrelation.

Regarding claim 21 and 27, Potard discloses that the same audio signal is used for each of several non-point sound sources (such as several singers in a choir singing the same song). A different value is assigned to apply to different decorrelations (such as position of each singer in choir, pitch transformation, reflective surface and

etc.) to each of said non-point sound sources. The claimed complex shaped non-point sound source read on one of several examples as discussed under section 2.3.1.

(10) Response to Argument

1. Claim 16

Appellant argued that, starting at the last paragraph of p. 6, Potard fails to show how to increment the diffuse select parameter as disclosed in the specification. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claimed limitation in claim 16 is “incrementing said value for an additional non-point sound source using the same audio signal" and "said incremented value in a field specifying decorrelation information to specify a different decorrelation for said additional non-point sound source". Claim 16 does not specify "BIFS" or "diffuse select parameter" (stated on the last paragraph of p. 6 of the brief) as disclosed in the specification as originally filed.

Furthermore, claim 16 is rejected under 35 U.S.C. 103 rejection as being obvious in view of Potard.

Appellant argued, on the second full paragraph of p. 7, that Potard does not even suggest the need to apply a decorrelation where the same audio signal is used for more than one non-point sound source. Examiner disagrees. One example provided by Potard in section 2.3.1 is to simulate a choir. By duplicating the same singer-object several times, Potard teaches that the same audio signal is being used to simulate the

chorus effect. The term “decorrelation” has a meaning defined by prefix “de” plus the word “correlation”. Prefix “de” means to be away. The word “correlation” means being similar by a relationship. By combining those two definitions together, “decorrelation” means to make it altered or not as closely related. In other words, by applying decorrelation to an original object, an object is being changed from the original object, so this object is not similar to the original object. In order to simulate a choir, Potard suggests to duplicate a single singer several time and to apply pitch transformation. See section 2.3.1. This means that the same audio signal is being altered by pitch transformation in order to simulate the chorus effect. The sound effect of a choir is different from the sound effect of a lone singer. Even with the choir singing the same song as the lone singer, any one with normal hearing ability can tell the difference between those two by listening.

According to the definition provided by web site http://en/wikipedia.org/wiki/chorus_effect, to produce the chorus effect, either naturally or in simulation, individual sounds with roughly the same timbre and nearly (but never exactly) the same pitch converge and are perceived as one. When the effect is produced successfully, none of the constituent sounds is perceived as being out of tune. Rather, this amalgam of sounds has a rich, shimmering quality which would be absent if the sound came from a single source. The effect is more apparent when listening to sounds that sustain for longer periods of time.

This definition resonates with the suggestion provided by Potard. Applying pitch transformation for additional non-point sound sources, so additional non-point sound

source (additional members of a choir) will not have the same pitch as the first non-point sound source (the singer being duplicated). It also indicates that it is necessary to apply pitch transformation for the audio signal in order to simulate amalgam of sounds has a rich, shimmering quality which would be absent if the sound came from the single source.

Appellant argued, on the third full paragraph of p. 7 and the second full paragraph of p. 8, that Potard does not mention or suggest that the parameters are for assigning one of several decorrelations. This is not persuasive for several reasons. First of all, claim 16 does not explicitly claims “several decorrelations”. Secondly, defining the object position is one way to define the sound source being different (decorrelated) from other sound source because its position would alter the sound effect from this sound source due to sound reflection from nearby surfaces (such as walls, ceiling, floor, furniture and sound equipment and so on), and the distance between this sound source and the listener. Table 1 of Potard provides several parameters to be defined by the user for each sound object. Those parameters provide several decorrelations.

Appellant argued, on the fourth full paragraph of p. 7, that the office action fails to provide any factual support for claimed limitation of incrementing the value. This is not convincing. As explained in the final office action, Potard teaches that a pitch transformation is applied for additional duplicated singer objects. Since the pitch is

being transformed from the original pitch, the newly transformed pitch could have higher pitch value or lower pitch value than the previous one. As provided by Wikipedia as stated above, the pitch cannot be the same to generate the chorus effect. Thus, one skilled in the art would have been motivated to modify Potard by adjusting the pitch value appropriately, either having higher pitch value or lower pitch value than the original pitch value, in order to simulate the chorus effect.

Appellant argued, on the fifth full paragraph of p. 7, that Potard does not suggest incrementing said value for an additional non-point sound source using the same audio signal and including the incremented value in field specifying decorrelation information to specify a different decorrelation for said additional non-point sound source. This is not persuasive. Again, Potard teaches that the pitch transformation is applied to the duplicated singer objects to simulate the chorus effect. Duplicated singer objects imply that the same audio signal is used. One skilled in the art would understand a choir, in general, implying that its members sing the same song, even though, not necessary at all the time. For prior art rejection, the office action compared the claimed invention with Potard's choir when its members singing the same song. Thus, the claimed limitation "using the same signal" or equivalent phrase is met. When a pitch transformation is applied, the new pitch for the additional singer object has a different decorrelation value than the previous one. So, the claimed "a different decorrelation" is met.

Appellant argued, on the third full paragraph of p. 8, that Potard does not suggest to transmit only an information to apply different decorrelations. This is not convincing. First of all, claim 16 does not include such limitation. Furthermore, on section 2.3.2, Potard teaches the benefit of transmitting only few parameters of the macro-object to a remote site, so the description of the audio scenes will be simplified and the amount of information being transmitted will be reduced significantly.

Appellant argued, on the fourth full paragraph of p. 8, that even different members of a choir singing the same note, the members do not have the same audio signal. However, appellant fails to provide any concrete evidence to support such statement. On the other hand, the definition provided by Wikipedia as stated above clearly indicates that all members sings the same note, but the chorus effect would make the sound effect being different from the same note being sung by a lone singer. Furthermore, on section 2.3.1, Potard indicated that the singer object (the one to be repeated several times) is the linkage of a sound source. Potard does not indicate that the duplicated singer objects are being linked to different sound sources.

<u>2. Claims 17 and 19-21</u>

Since appellant fails to provide any new argument other than those for claim 16, the rebuttal for claim 16 is also applied to claims 17 and 19-21.

<u>3. Claim 22</u>

Since appellant fails to provide any new argument other than those for claim 16, the rebuttal for claim 16 is also applied to claim 22.

<u>4. Claim 23 and 25-27</u>

Since appellant fails to provide any new argument other than those for claim 16, the rebuttal for claim 16 is also applied to claims 23 and 25-27.

<u>5. Claim 28</u>

Since appellant fails to provide any new argument other than those for claim 16, the rebuttal for claim 16 is also applied to claims 17 and 19-21.

<u>6. Claim 29</u>

Since appellant fails to provide any new argument other than those for claim 16, the rebuttal for claim 16 is also applied to claims 17 and 19-21.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

pwl

Conferees:

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